US Army Corps
of Engineers®
Sacramento District

Engineering Division

Quality Management System

Quick Reference Guide

Military

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Quick Reference Guide

Contents

Introduction

This brochure provides a quick reference guide to the policies and procedures that guide Engineering Division's Quality Management System (QMS). Those policies and procedures outline our responsibilities for establishing, implementing, and maintaining a structured QMS.

Questions or comments concerning this brochure and/or the QMS may be directed to the Management Representative, Mr. Frank W. Winton, at (916) 557-7702.

Engineering Division Quality Policy Statement

Engineering Division is committed to be a recognized leader in providing a wide range of state-of-the-art engineering services, and providing our customers high quality products in a professional, efficient, and a responsive manner.

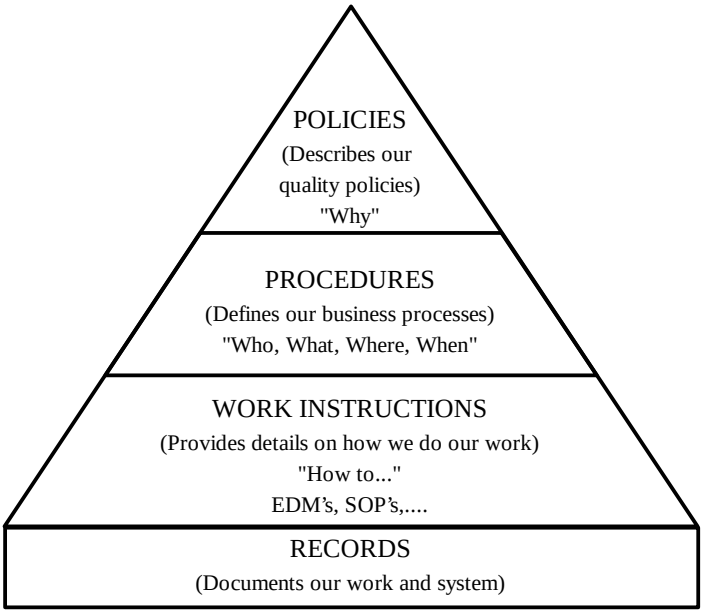
We pledge to:

- Honor our commitments.
- Strive for continued improvement.
- Emphasize teamwork within Engineering Division, with customers, and with all entities with which we interface.
- Partner with our customers to establish clear design/project requirements, and mutually acceptable scope of services, cost, schedule, and quality expectations.
- Recognize our employees as our primary asset, providing an excellent work environment and training opportunities.
- Follow our established processes and procedures, while allowing flexibility to respond to specific customer-defined quality achievement.

♦ Obtain and retain ISO 9001 Registration.

What type of System do we have?

Our QMS serves the needs of our business, supports our customers, and can be documented and controlled. Our QMS must clearly and simply “say what we do,” “do what we say,” and provide proof. This process is based on doing what is required by our customers and necessary for our business. The system can be described in a tier form as follows:



Where is our Quality Management System maintained?

Engineering Division Office keeps a record copy of the QMS documents.

Our source of distribution can be found on the District home page on our Internet.

How was this System created?

These policies, procedures, and work instructions are written by Engineering Division people for Engineering people.

What are the benefits to You of this System?

- Better Communication.
- Helps all of us focus on established business procedures.
- Better understanding of our system, including new personnel.
- Continuous improvement.

What is expected of You?

Every person in Engineering Division is expected to apply these policies and procedures while executing their work. You need to:

- Be knowledgeable of Engineering Division policy objectives and QMS requirements.
- Apply our policy and procedures to the work you do.

- ♦ Keep documents, work instructions, and job aid up to date in your area. Change all documents through formal procedures only.

- ♦ Participate in internal audits to help improve our system. (These are audits of the system, not of you!)

- ♦ Actively support Engineering Division's Management Team and Management Representative.

- ♦ Know what to do when quality issues arise.

What is "Certification" and how do we obtain it?

It is one thing to state we believe we have an effective QMS, but it is another thing to prove it. Certification of our system is similar to the professional registrations and certifications obtained by many of us. To achieve certification, we will compare our system to the ISO 9001 registration standards. ISO 9001 is a set of international standards that define the requirements of QMSs. It is THE STANDARD used by the international community to measure their processes and procedures. Certification evaluation will be performed by an accredited registrar. The registrar will send an audit team to perform an exhaustive assessment of our business processes. Essentially, they will check to see that we say what we do, do what we say, and can prove it. This evaluation will include all areas which affect our QMS and must be reconfirmed on a 6- to 12 months periodic basis. Passing the certification audit will identify us as a "professionally registered" organization.

What does Certification do for us?

Certification of our system to the ISO 9001 standard is not a Corps requirement; however, we believe there are numerous advantages for Sacramento District Engineering Division to obtain certification. The potential benefits include:

- ♦ Increased job satisfaction by our team members.

- Improved customer satisfaction, productivity, and control.
- Fewer changes during design and construction.
- Better communication internally and with our customers.
- Techniques to pursue continuous improvement.
- Recognition as quality leaders.

Engineering Division Policies
(Extracts from our Quality Manual)

1. Management Responsibility

Our Division maintains an organization structure that defines responsibilities, authority, and lines of communications for areas that affect product and service quality. Accountability and responsibility for quality rest with all Engineering Division employees. Our responsibilities include:

- Set priorities.
- Provide required resources.
- Develop measures and monitor for key performance.
- Direct correct/preventive actions.
- Evaluate system effectiveness.

2. Quality Management System

Our QMS addresses specific functions and processes that affect product quality, and provides for methods of planning, implementing, documenting, monitoring, and auditing these activities. The levels of the QMS are:

- Level 1 - Policy.
- Level 2 - Procedures.
- Level 3 - Work Instructions.
- Level 4 - Records.

3. Contract Review

(a.k.a. Scope of Services; this is our contract with customers.)

Our QMS requires an understanding of the customer's requirements, and addresses the ability and capability to meet those requirements. Our responsibilities include:

- ♦ Ensuring agreement with customers.
- ♦ Accomplishing work in conformance with requirements.
- ♦ Coordinating with all District team members.
- ♦ Conducting a review of each work request to determine our ability to accomplish the effort within established budget and schedule.

4. Design Control

Our QMS requires that we:

- ♦ Develop, plan, and schedule for overall design efforts.
- ♦ Develop a design budget.
- ♦ Allocate resources.
- ♦ Maintain liaison between different entities which input to the design
- ♦ Review, identify, and verify the design requirements.
- ♦ Validate design upon completion.
- ♦ Control all design changes or modifications.

5. Document and Data Control

Our QMS directs us to approve, issue, circulate and revise documents and data under controlled conditions. Documents and data may become records when they are no longer subject to change. All obsolete documents may be retained as records for legal or knowledge preservation purposes.

Specific documents and data include:

- Customer requirements and requests for work.
- Quality Manual, technical guidance/criteria, and work instructions (SOPs)
- Engineering products, such as Design Memorandums and reports, HTRW reports, and Plans and Specifications.

6. Purchasing

(Includes A-E service contracts)

Our QMS requires that the purchase and procurement of materials and services conform to specified requirements. Purchases are authorized, prepared, reviewed, and verified in accordance with guidance.

7. Control of Customer Supplied Product

Our QMS addresses Customer Supplied Products as materials, documents, or data that a customer provides for use during product development.

Customer Supplied Products are inspected upon receipt from the customer and are handled, stored, and maintained as appropriate for the type product supplied. Lost, damaged, nonconforming, defective, or unserviceable products are reported to the customer.

8. Product Identification and Traceability

Our QMS provides for the identification and traceability of a product. Project-unique products shall be identified and be traceable from source to end use. (e.g.: MARKS, Drawing File and Specification numbers). Finished products shall be identified to provide traceability and prevent misplacement.

9. Process Control

Our QMS directs through Quality Management Plan (QMP) that all work in Engineering Division is planned, scheduled, budgeted, and defined by means of implementing a Quality Control Plan (QCP) for a specific customer request.

The QCP provides criteria for acceptability, establishes monitoring and control points, and references standard, codes, regulations.

Where the customer's requirements differ from Engineering Division procedures, the customer's procedures shall be referenced by the customer request and shall supersede internal processes.

10. Inspection and Testing

Our QMS requires review of incoming materials, inspection and testing at critical stages of production, and final inspection prior to delivery.

In-process reviews are performed during project development to ensure the product conforms to the specified requirements.

Final inspections and tests are facilitated through the use of the Automated Review Management System (ARMS) to determine if the product satisfies the specific requirements.

11. Control of Inspection, Measuring, and Test Equipment

Our QMS calls for the calibration and maintenance of measuring and test equipment used for inspection, measurement or testing purposes.

Measuring and test equipment, including special tools developed for inspection purposes, shall be calibrated, maintained and inspected. All such equipment is used in a manner that ensures that the measurement uncertainty is known and is consistent with the required capability.

Computer-based software used to determine dimensions, dimensional accuracy, used as a basis to determine acceptability of a product shall be inspected, checked and verified at prescribed intervals.

12. Inspection and Test Status

Our QMS directs that the requirements for and results of tests and inspections be identified to assure that only conforming products are used for further processing or delivery.

All deliverables produced by ED are identified as to the stage of design (30%, 60%, 90%, etc.) or study and contain identification of manager, designer, and reviewers.

13. Control of Nonconforming Product

Our QMS addresses identification, documentation, evaluation, segregation, and disposition of nonconforming, materials, services, or products to prevent their use. Within Engineering Division, nonconforming products are generally limited to the design process. These can occur as design errors, incorrect data collection, erroneous assumptions, use of inappropriate criteria, or incorrect project scoping.

The nonconforming product may be used as is, reworked/repaired, redirected, or repurchased/replaced. If a decision is made to accept a nonconforming product, this decision shall be reported to the customer, and a description of the product shall be recorded to denote the actual condition.

Nonconformance in material or equipment received from any supply source shall be returned. Reworked or repaired items shall be reinspected to verify conformance.

14. Corrective and Preventive Action

Our QMS system provides for the identification, documentation, investigation, and implementation of corrective and preventive measures, including following up inspections to ensure effectiveness.

Corrective action involves the investigation and documentation of the cause(s) of customer complaints and nonconforming product, determination and implementation of corrective action needed, and follow-up monitoring/auditing. Preventive action includes monitoring of work processes, reviews/analysis of tests, inspection data, and audit results to prevent nonconforming products.

15. Handling, Storage, Packaging, Preservation, and Delivery

Our QMS provides for the handling, storage, packaging, and transporting of products within Engineering Division control to prevent damage or undue deterioration.

Materials that have been stored for an extended duration shall be visually reinspected for signs of damage or deterioration prior to use.

16. Quality Records

Our QMS provides for storage, maintenance and retrieval of quality records. Quality records may consist of either hard copy or electronic stored data and may include memos, inspection reports, audit reports, corrective action request, specification reviews, meeting minutes, material or product certification, As-Built drawings, final design documents, etc.

Records are always available for the customer's review. Storage methods will prevent damage, deterioration and loss. Retention times are established and recorded.

17. Internal Quality Audits

Our QMS provides for the planning, scheduling, implementation, and documentation of internal audits to ensure quality-related activities comply with written procedures.

Each functional unit shall be audited on a periodic basis by internal auditors selected from a functional unit other than the area audited.

Internal audit results include a statement as to the effective application of the QMS, and possible suggestions of what corrective/preventive actions are needed.

When nonconforming conditions are found, a corrective action plan shall be developed and implemented. Follow-up audits shall be scheduled to ensure the corrective/preventive action was implemented and effective.

18. Training

Our QMS requires the identification of employee training and qualification needs. Management is responsible for ensuring that the qualifications of employees are appropriate for all tasks affecting quality.

Positions and job functions have documented training, certification, and qualification requirements. Individual Development Plans are prepared for all employees.

19. Servicing

Our QMS requires the establishment and maintenance of procedures specific to performing and verifying that servicing work appropriately meets customer needs. Typical servicing work includes support

provided through Design Services During Construction, site visits, periodic inspections, hydro monitoring, Water Management, and Project Operation.

20. Statistical Techniques

Our QMS provides for the use of statistical techniques to confirm process and product acceptability, and to provide a basis for continuous improvement. We use statistical techniques for monitoring customer satisfaction, assessing trends, and measuring overall performance.

Engineering Division Procedures

The procedures we follow in accomplishing our work are devised to be responsive to the 20 clauses of our Quality Manual. Each procedure lays out the process to follow to accomplish some aspect of our work. Each procedure includes seven basic components:

- Purpose
- Scope
- References
- Responsibilities
- Definitions
- Procedure
- Records

By reviewing our policies, procedures, and activities regularly, we can identify changes that help us continually improve.

Engineering Division Memorandums

These are quality administrative Work Instructions that are a mixture of “How To” or SOPs and policy documents.

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